ABSTRACT

Antibacterial Activity of Hibiscus sabdariffa L. Flowers Extract – Sodium Alginate Gel against Staphylococcus aureus ATCC 25923

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The aim of this research was to determine the concentration of sodium alginate in Hibiscus sabdariffa L. flowers extract gel and determine the concentration of Hibiscus sabdariffa L. flowers extract are able to provide antibacterial activity against Staphylococcus aureus ATCC 25923. Researches based on the extract activity as a natural antimicrobial have been reported. The extract solutions were tested for antibacterial activity against Staphylococcus aureus ATCC 25923 in Nutrient agar medium. Growth inhibition test was carried out by agar diffusion method, using hole as sample and gentamicin standard solution reservoir. The minimum inhibition concentration (MIC) of the roselle's aqueous extract was 0,1 mg/ml. In this research, the roselle's aqueous extract (3%) was formulated as a component of gel containing sodium alginate in various concentration (2,5%, 3%, and 3,5%). The gel then undergoed viscosity, pH, spreadability, and antibacterial activity evaluation. The results of evaluation of physical characteristics and antibacterial activity were analyzed by One-Way ANOVA. Through this evaluation, the chosen formula was formula 2 containing 3% of sodium alginate. Formula 2 then undergoed. MIC determination and the MIC of the gel preparation was 0,40 mg/ml. The inhibition zone of formula 2 equivalent to 3,432 ppm of gentamicin.

Keywords : Hibiscus sabdariffa L. aqueous extracts, sodium alginate, gel Staphylococcus aureus, antibacterial.